THE NON-ABSORBABLE SUTURE AND LIGATURE.*

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THERE are few subjects that have occupied the surgical mind more than that of suture material. Animal suture material has the disadvantage that when moist it is difficult to tie, when fine it has little tensile strength, and when coarse it is not suited to fine plastic work. Silk on the contrary is the easier handled when wet, makes all the firmer knots from moisture, possesses adequate strength in its finest sizes for the work for which it may be selected, and when rendered sterile satisfies most of the requisites for suturing material.

In the class of surgery that permits of immediate closure of the initial wound, primary union and return to soundness always gives rise to the question, What becomes of the silk suture or ligature? In amputations bleeding vessels are surrounded by different structures than when operations are performed in serous cavities; yet in both instances the sterile suture or ligature is probably immediately enveloped in exudate which is later organized and becomes a part of the economy. If the suture material is fine, it may never give rise to any irritation; but if large, and of sufficient strength to ligate an ovarian pedicle, the ligature may finally come away.

But in the class of surgery—especially abdominal surgery—in which it is not feasible to close the initial wound, pus cases, or cases where drainage is indicated, the fate of the non-absorbable suture or ligature is not a matter of doubt. The suture about an appendix, the stump of a pedicle, or the peripheral suture in a plastic operation of the intestine, is liable to infection; and healing will be retarded until the suture comes away. It is hard to explain why in so many cases of necrosed appendices the sinus leading to the part will be two, three, four, or more months in closing and

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finally without any assignable cause will heal, unless it can be explained by the presence of infected ligature that has finally been ejected.

No part of the operation for the removal of the appendix has given rise to more discussion than the treatment of the stump. The usual way of ligating with silk and dropping the bowel back, while it often answers perfectly well in clean cases, is, it seems to me, open to objection in the gangrenous ones. The earlier surgeons in amputations always brought the ends of the ligatures out of the wound, and such it seems to me would be good routine surgery in ligations in infected areas.

In anastomoses of the intestines, whether the Murphy button be used or suture, it is the practice of many surgeons to put a fine running stitch around the serous border of the approximated structures. If such a case could be insured against infection this peripheral suture would do no harm; but if infection is unavoidable and drainage necessitated, then this peripheral suture may become a permanent annoyance and be the cause of an intractable sinus.

In a case of gangrene of the intestine following a neglected umbilical hernia, after resection of about five inches of intestine and approximation with the Murphy button I employed a fine silk peripheral suture.

On the tenth day I was surprised to see a large accumulation of fecal matter at the opening of the wound. My fears that the button had escaped at its point of insertion into the abdominal cavity led me to probe for it, but as the patient presented no untoward symptoms I concluded that the rent in the bowel had been made as the button became detached and that only a small rent had occurred. The fecal discharge continued for only a few days but a sinus remained for several weeks, which I attributed to the infected peripheral suture. I therefore took a piece of wire upon which I had made a hook like a crochet needle and passed it down to the bottom of the sinus, and had the satisfaction of catching a loop in the suture. This I seized with a pair of forceps and after

dividing it upon one side of the forceps drew out a single piece quite two inches long.

Such an experience would lead one to adopt some other means of suturing the border of an approximated bowel than entirely surrounding it, or suggest the propriety of bringing the ends of the suture out of the initial wound.